

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

**HALLIBURTON ENERGY SERVICES,
INC., HALLIBURTON US
TECHNOLOGIES, INC., HALLIBURTON
GROUP TECHNOLOGIES, INC.,**
Plaintiffs

-v-

U.S. WELL SERVICES, LLC
Defendants.

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6:21-CV-00367-ADA

**MEMORANDUM IN SUPPORT OF SUPPLEMENTAL
CLAIM CONSTRUCTION ORDER**

Before the Court is U.S. Well Services, LLC’s (“USWS”) motion to clarify the plain and ordinary meaning of the terms “the signals” in Claim 1 of U.S. Patent No. 7,574,325 (the “’325 Patent”) and “virtual rate control system using” in Claim 1 of U.S. Patent No. 7,836,949 (the “’949 Patent”). (Dkt. No. 416).¹ Halliburton responded to the motion. (Doc. No. 426). USWS filed a reply. (Doc. No. 430). The Court conducted a hearing on August 16, 2023. The Court provides this memorandum in support of the Supplemental Claim Construction Order concurrently issued with this memorandum.

I. CONSTRUCTION OF DISPUTED TERMS/PHRASES

USWS moves the Court to clarify the meaning and scope of two terms/phrases in the ’325 Patent and the ’949 Patent.

A. “comparing at least some of the signals”

¹ Citations to the parties’ filings are to the filing’s number in the docket (Dkt. No.) and pin cites are to the page numbers assigned through ECF.

<u>Disputed Term</u>	<u>USWS's Proposal</u>	<u>Halliburton's Proposal</u>
"comparing at least some of the signals"	No construction needed.	No construction necessary.

1. Analysis

The phrase "comparing at least some of the signals" appears in Claim 1 of the '325 Patent. USWS originally argued that a construction was required because "[t]he plain and ordinary meaning of the phrase 'the signals' is limited by its antecedent basis—i.e., 'a plurality of signals'—referred to earlier in the claim." (Dkt. No. 416 at 6). USWS contended that "Halliburton's expert, however, ignores the antecedent basis for 'the signals.'" *Id.* Halliburton noted that USWS did not provide any explanation or citation in support for its contention. (Dkt. No. 426 at 6). In its reply, USWS did not provide any support for its contention, but instead stated that "Halliburton essentially agrees with USWS's construction of 'the signals'", and that USWS "can agree no construction is necessary as long as neither Halliburton nor its experts disagree when USWS takes the position that 'the signals'—by virtue of the antecedent basis—refers to the previous mentions of 'signal.'" (Dkt. No. 430 at 5). During the August 16, 2023 Hearing, the parties confirmed that they agree that the phrase does not require construction. Accordingly, the Court adopts the parties' agreement.

2. Court's Construction

For the reasons set forth above, the phrase **"comparing at least some of the signals"** does not require construction.

B. "virtual rate control system using"²

² The term "using" in Claim 8 of the '949 Patent was included in the parties' briefing. On August 15, 2023, Halliburton notified the Court that it dropped Claim 8 of the '949 Patent, and that a construction for the term "using" in Claim 8 was no longer necessary.

<u>Disputed Term</u>	<u>USWS's Proposal</u>	<u>Halliburton's Proposal</u>
"virtual rate control system using"	"using" means "refer to what the virtual rate control system uses to produce a drive signal"	No construction necessary.

1. Analysis

The phrase "virtual rate control system using" appears in Claim 1 of the '949 Patent.

Claim 1 of the '949 Patent follows:

1.A method for controlling the production of well treatment fluid comprising:
determining an output rate from a sand system;
sensing an output rate from a water system;
sensing an output rate from a pumping system;
sensing the height within a blender tub of a mixture of sand from the sand system and water from the water system;
providing a virtual rate control system; and
producing a drive signal to the pumping system *using* the *virtual rate control system* using a desired rate of well treatment fluid to be delivered to a well, the output rate of the sand system, the output rate of the water system, and the output rate of the pumping system.

'949 Patent at Claim 1 (emphasis added). The parties dispute whether the recited "virtual rate control system" is required to use all four parameters recited in Claim 1 of the '949 Patent (*i.e.* "a desired rate of well treatment fluid to be delivered to a well, the output rate of the sand system, the output rate of the water system, and the output rate of the pumping system.")).

USWS argues that Halliburton's expert, Dr. Cardi, divorces the serial list of elements after "using" from the "drive signal." (Dkt. No. 416 at 8). According to USWS, Dr. Cardi contends that the "virtual rate control system" only "has to use the desired rate of well treatment fluid to be delivered to a well." *Id.* (citing Dkt. No. 416-3 at 29:5–18, 28:20–29:4). Halliburton responds that USWS's construction requires that the second instance of "using" modify language appearing earlier in the claim, rather than the language immediately preceding the word.

1. A method for controlling the production of well treatment fluid comprising:

providing a virtual rate control system; and
 producing a drive signal to the pumping system using the
 virtual rate control system using a desired rate of well
 treatment fluid to be delivered to a well, the output rate of
 the sand system, the output rate of the water system, and
 the output rate of the pumping system.

(Dkt. No. 426 at 7). USWS replies that it agrees with Halliburton that “using” in “virtual rate control system using” modifies “virtual rate control system.” (Dkt. No. 430 at 6). USWS argues that the issue is not whether the second “using” modifies “virtual rate control system,” but rather whether Halliburton can re-write the claim to completely divorce two related concepts in the same sentence. *Id.*

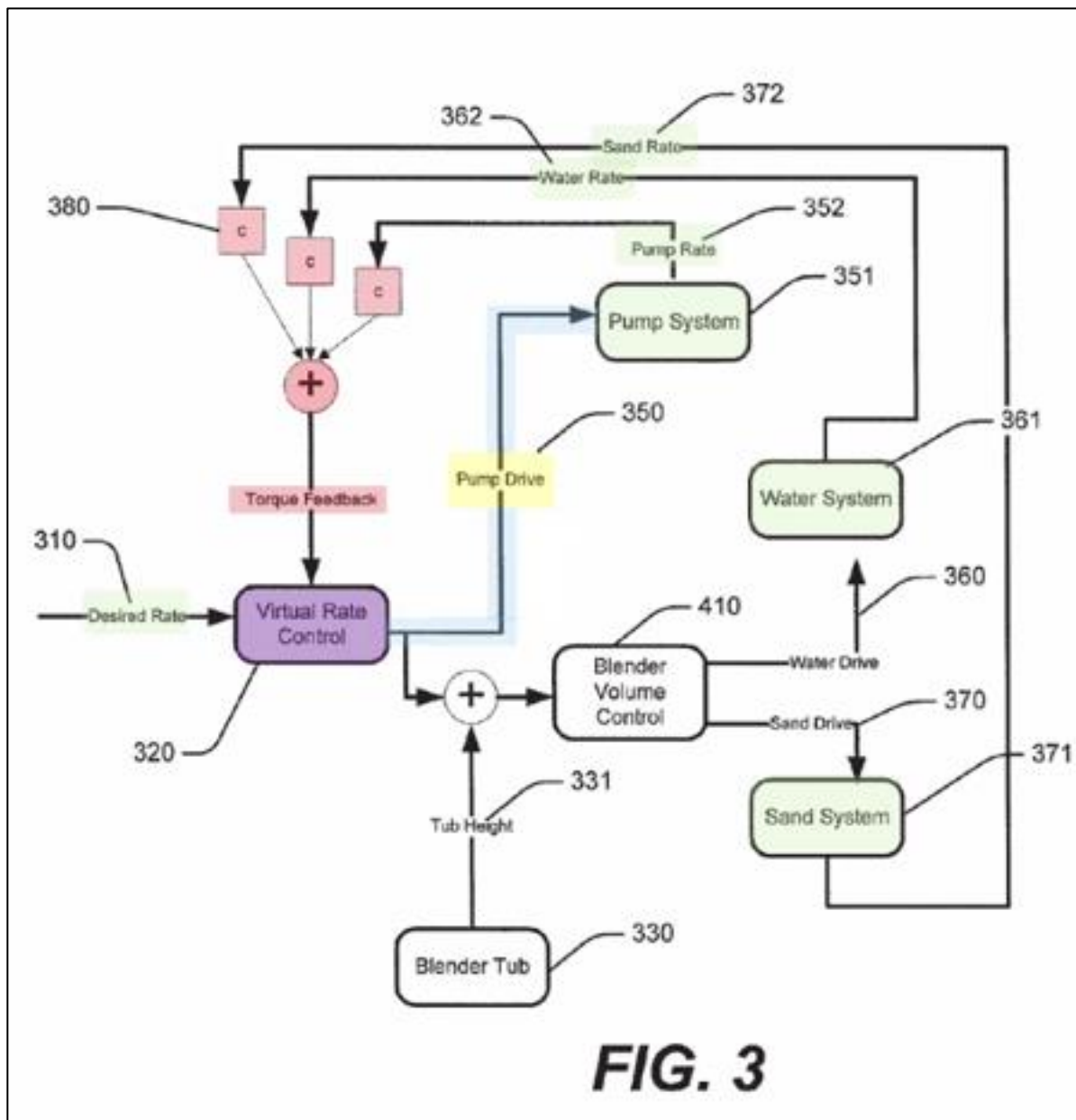
The Court notes that the syntax of the claim language is contrary to Halliburton’s contention. Claim 1 is a method claim with each element of the claim separated by a semicolon (*e.g.*, “determining ... ; sensing ... ; providing ... ; and producing”). Halliburton contends that the portions of Claim 1 below in yellow and green having nothing to do with one another:

[P]roducing a drive signal to the pumping system using the virtual rate control system using a desired rate of well treatment fluid to be delivered to a well, the output rate of the sand system, the output rate of the water system, and the output rate of the pumping system.

(Dkt. No. 430 at 7). As indicated, the syntax of the claim language indicates that the “producing” element is one clause and should not be parsed as Halliburton contends. To be sure, the phrase “virtual rate control system using” is describing how the following parameters are used to produce the drive signal.

Accordingly, the Court agrees with USWS that the first instance of “using” identifies

what device is used to produce the drive signal (*i.e.*, the virtual rate control system) and the second instance of “using” identifies what parameters the virtual rate control system uses when it produces the drive signal. This claim language is illustrated in the following portion of the specification and Figure 3 below:



The virtual rate control 320 can be implemented in hardware or software in a stand alone computer or ASIC, or within any of the systems used to control the pumping system 351, water system 361, or proppant or sand system 371. In this disclosure, the terms

sand and proppant are used synonymously. The virtual rate control can be programmed with transfer functions that can relate the desired rate 310 to a pump drive signal 350. The transfer functions can account for the particular type of pumping, water, or sand systems being implemented and can adjust the drive signals according to feedback signals 352, 362, and 372 and sensor data from the blending unit 105 (also called the blender tub), such as the tub height 331.

'949 Patent at 6:6–19, Figure 3 (highlight added).

Halliburton's remaining arguments are not persuasive. The use of "based on" in other dependent claims does not change the meaning of "using" in Claim 1. Likewise, Halliburton's suggestion that embodiments are being excluded ignores that the embodiment it points to is referring to an embodiment separate from Claim 1. Specifically, it refers to other parameters not included in Claim 1, such as "the gel water rate 535, the gel powder rate 536, the resin sand rate 515 . . ." '949 Patent at 11:5–19. Accordingly, the Court rejects Halliburton's arguments.

2. Court's Construction

For the reasons set forth above, the phrase "**virtual rate control system using**" is given its **plain and ordinary meaning**.

II. CONCLUSION

The Court adopts the constructions listed in the Supplemental Claim Construction Order. Furthermore, the Parties should ensure that all testimony that relates to the terms addressed in this memorandum is constrained by the Court's reasoning. However, in the presence of the jury the Parties should not expressly or implicitly refer to each other's claim construction positions and should not expressly refer to any portion of this memorandum that is not an actual construction adopted by the Court. The references to the claim construction process should be limited to informing the jury of the constructions adopted by the Court.

SIGNED this 21st day of August, 2023.



DEREK T. GILLILAND
UNITED STATES MAGISTRATE JUDGE